

REMARKS

Claims 1-6 have been rejected by the Examiner under 35 USC §103(a) as being unpatentable over Maruko, U.S. Patent 6,071,201 in view of Berman, deceased et al., U.S. Patent 3,784,207. This rejection is respectively traversed.

The present invention is directed to a multi-piece solid golf ball having excellent flight performance and excellent shot feel at the time of hitting the golf ball while achieving good workability in the making of the golf ball. The golf ball is composed of an inner core layer, an outer core layer, and a cover. In the method of manufacturing the golf ball, the present invention provides good releasability from the mold because the core outer layer does not contain a zinc salt of an unsaturated carboxylic acid, for example, zinc acrylate. Also, both the center of the core and the core outer layer are made of a rubber composition and in addition, in the present method, an unvulcanized core center and a semi-vulcanized or unvulcanized core outer layer are integrally vulcanized.

One of the important features of the present invention is that the rubber composition for the core outer layer does not contain a zinc salt of a an unsaturated carboxylic acid. As explained on page 10, line 24 to page 11, line 21 of the present application, a rubber composition containing zinc acrylate has very poor releasability from a mold when vulcanizing a rubber composition.

Thus, in the multi-piece solid golf ball of the present invention, a rubber composition containing no zinc acrylate is used for the core outer layer 2. However, it is required that the rubber composition for the center 1 contains zinc acrylate in order to retain good rebound characteristics in the resulting golf ball. Therefore, in the method of the present invention, the rubber composition containing no zinc acrylate is used for the core outer layer 2, which is in contact with the mold when vulcanizing the rubber composition, but the rubber composition for the center 1 contains zinc acrylate because the center is not in contact with the mold when vulcanizing the rubber composition. Thus, the advantageous features of both good releasability from the mold and good rebound characteristics in the resulting golf ball can be achieved.

As the Examiner will note, claim 1 has been amended to contain the subject matter of claim 5, and correspondingly, claim 5 has been cancelled from the present application. Thus, in the method of making a multi-piece solid golf ball according to the present invention, the unvulcanized center containing a zinc salt of an unsaturated carboxylic acid is used in step (a) and the core outer layer which does not contain a zinc salt of an unsaturated carboxylic acid is used in step (c). Therefore, a multi-piece solid golf ball having good workability (releasability), excellent

flight performance (rebound characteristics) and good shot feel at the time of hitting is obtained.

In paragraph 3 of the Examiner's Office Action, the Examiner argues that there is motivation to combine both the Maruko and Berman patents because both Maruko and Berman teach an inner core made of the same materials. However, it is disclosed in column 2, lines 39-49 of the Berman et al. reference that suitable elastomers for the center and the cover of the golf ball include any elastomer which is capable of being cross-linked (vulcanized). Therefore, the most preferable elastomer is a cis-butadiene rubber containing at least 40% of the cis configuration. On the other hand, as disclosed in column 2, lines 62-65 of the Maruko reference, the inner core layer of the solid core is not made of a rubber composition. In addition, it is clearly disclosed in column 3, lines 4-6 of the Maruko reference that resins suitable for use in the inner core layer include thermoplastic resins and thermoplastic elastomers containing at least 40% of the cis configuration. On the other hand, as disclosed in column 2, lines 62-65 of the Maruko reference, the inner core layer of the solid core is not made of a rubber composition. In addition, it is clearly disclosed in column 3, lines 4-6 of the Maruko reference that resins suitable for use in the inner core layer include thermoplastic resins and thermoplastic elastomers known in the art. The statement in the Maruko patent that the inner core layer of the solid core 1 is not

made of a rubber composition is in complete opposition to the present invention in which both the center of the core and the core outer layer are made of a rubber composition.

In the method of the present invention, it is required to integrally vulcanize the unvulcanized center and the semi-vulcanized or vulcanized core outer layer. However, the inner core of the Maruko reference is formed from a thermoplastic material which is not capable of being cross-linked. Therefore, the Maruko reference does not disclose the present invention. If the inner core is made from the same materials in both the Maruko reference and the Berman et al. reference as alleged by the Examiner in the Office Action letter, then the Berman et al. reference does not disclose the feature (c) of the present invention. On the other hand, if the inner core of the two reference is made from different materials, there is no motivation to combine the two references in order to arrive at the method of the present invention as thoroughly discussed in the Applicants' previous response to the Examiner's Office Action letter.

As should be noted, claim 1 has been amended to include the subject matter of claim 5. Accordingly, since the subject matter of claim 5 which was dependent from claim 1 has always been present prior to final rejection for consideration by the Examiner, it is believed that the introduction of the subject matter of claim 5 into claim 1 should not raise a new issue and accordingly it is

respectfully requested that the Examiner enter the proposed Amendment thereby placing the present application into condition for allowance.

Accordingly, reconsideration of the rejection and allowance of the present application are respectfully requested. In the event that the proposed Amendment does not place the present application into condition for allowance, entry thereof is respectfully requested as placed in the present application into better condition for appeal.

Conclusion

Pursuant to the provisions of 37 C.F.R. § 1.17 and § 1.136(a), Applicant hereby petitions for an extension of one (1) month in which to file a response to the outstanding Office Action. The required fee of \$120.00 is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees

required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By 

Joseph A. Kolasch, #22,463

JAK/pay/mag
0020-4881P

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000